

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)**

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/002471

International filing date (day/month/year)
10.06.2004

Priority date (day/month/year)
10.06.2003

International Patent Classification (IPC) or both national classification and IPC
H04L29/08

Applicant
SYMBIAN SOFTWARE LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1 (a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/002471

IAPS RECEIVED 08 DEC 2005

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II Priority

1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
 - ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-22
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-22
Industrial applicability (IA)	Yes: Claims	1-22
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

International application No.

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Re Item V.

1 The following documents are referred to in this communication:

- D1: ENGELSTAD P ET AL: "Service discovery and name resolution architectures for on-demand MANETs" CONFERENCE PAPER, 19 May 2003 (2003-05-19), pages 736-742, XP010642458
- D2: AGRAWAL R ET AL: "Vinci: a service-oriented architecture for rapid development of Web applications" COMPUTER NETWORKS, ELSEVIER SCIENCE PUBLISHERS B.V., AMSTERDAM, NL, vol. 39, no. 5, 5 August 2002 (2002-08-05), pages 523-539, XP004369430 ISSN: 1389-1286
- D3: CHESHIRE S: "draft-cheshire-dnsext-dns-sd-00.txt" IETF DRAFT, 20 December 2002 (2002-12-20), XP015000500 IETF, GENEVA
- D5: KOZAT U C ET AL: "Network layer support for service discovery in mobile ad hoc networks" IEEE INFOCOM 2003. TWENTY-SECOND ANNUAL JOINT CONFERENCE OF THE IEEE COMPUTER AND COMMUNICATIONS SOCIETIES (IEEE CAT. NO.03CH37428) IEEE PISCATAWAY, NJ, USA, vol. 3, 3 April 2003 (2003-04-03), pages 1965-1975 vol., XP002303330 ISBN: 0-7803-7752-4
- D6: A. GULBRANDSEN; TROLL TECHNOLOGIES; P. VIXIE; INTERNET SOFTWARE CONSORTIUM; L. ESIBOV; MICROSOFT CORP.: "A DNS RR for specifying the location of services (DNS SRV)" REQUEST FOR COMMENTS, February 2000 (2000-02), pages 1-12, XP015008565 IETF, GENEVA
- D7: "Specification of the Bluetooth Sytem, Part E, Service Discovery Protocol (SDP)" BLUETOOTH SPECIFICATION, 1 December 1999 (1999-12-01), XP002245657
- D8: UNKNOWN: "UpnP, Jini and Salutation - A look at some popular coordination frameworks for future networked devices"[Online] 17 June 1999 (1999-06-17), pages 1-8, XP002303331 INTERNET Retrieved from the Internet: URL:www.cswl.com/whiteppr/tech/upnp.html> [retrieved on 2004-10-29]
- D10: CHRISTENSEN E ET AL: "Web Services Description Language (WSDL) 1.1" WWW CONSORTIUM SUBMISSION, [Online] 15 March 2001 (2001-03-15), XP002203550 INTERNET Retrieved from the Internet: URL:www.w3.org/tr/wsdl> [retrieved on 2004-10-29]

2 INDEPENDENT CLAIM 1

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D1 discloses (the references in parenthesis applying to this document):

a method of connecting a client running on a first computing device to a server running on a second computing device, comprising the steps of

(a) a service installed on the second computing device registering its published name, with a service broker (page 739, right column, last paragraph, Phrase "In addition, a service provider that wants to register with the service coordinator responds with an SREP ...". The definition of the SREP can be found on page 738, right column, third paragraph, "A service name request ...". Basic information about the underlying service name resolution concept can be found also on page 738, left column, last paragraph, "This is parallel to DNS-SRV lookups ... It allows a service name to be resolved into an IP address and a transport protocol number to be used to initiate the service.". See also Fig. 4, description of step (1).)

(b) the client sending a message to the service broker specifying the name of the service (See Fig.4, description of step (2) and the passages on page 738 mentioned above for information about the SREP/SREQ messages);

wherein the published name of the service conforms to a structured naming convention (See the passages on page 738 cited above. The DNS provides a structured naming convention, see also D6 for further information on the DNS-SRV, passages cited in the search report).

D1 and the wording of claim 1 differ in so far, that claim 1 additionally specifies that the service and the service broker are located on the same device. This however is a matter of normal design procedure and does not involve an inventive step for the following reasons:

(a) Document D1 itself proposes a fully distributed architecture (page 739, left column, see also page 737, left column, third complete paragraph "An alternative

...") whereby every node is service broker and service provider).

Document D1 furthermore proposes a hybrid architecture (page 740, left column, "6. Hybrid architecture", see also page 737, left column, fourth complete paragraph). In this architecture nodes who incorporate both service providers and service brokers coexist with nodes which only incorporate one functionality. The first mentioned passage makes clear, that "the same software can be used to realize the fully distributed, partially centralized and hybrid architecture". The person skilled in the art would therefore apply the principles described for the partially centralized architecture in a straightforward manner also to the fully distributed and hybrid architecture without involving an inventive step.

(b) Both, the service itself and the service broker are software processes. The installation of two software processes on the same device is a matter of normal design procedure and does not have any unexpected, surprising effect.

An unexpected, surprising effect due to the combination of well-known principles is, however, a key criterion for an inventive step.

(c) Furthermore, document D5 - from the same technical field as D1 - provides a general framework for distributing the functionalities of service brokers and service providers in order to achieve an optimized message flow in a mobile service discovery environment. The passages on page 1967, right column, Bullet V AP_i and page 1969, right column, first paragraph of chapter B. "Distributed Service Discovery (DSD) Phase" make clear, that both, separation or coexistence of service provider and service broker may be used. The decision for one implementation is based on further optimization considerations which are not mentioned in the application and may e.g. depend on the current, random state of a network.

2.2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D2 discloses (the references in parenthesis applying to this document):

(a) a service installed on the second computing device registering its published name, with a service broker (b) the client sending a message to the service broker

specifying the name of the service; wherein the published name of the service conforms to a structured naming convention (See page 528, left column, "The first of these administrative details ..." to page 529, left column, until " ... should the connection fail").

D2 and the wording of claim 1 differ in so far, that claim 1 additionally specifies that the service and the service broker are located on the same device. This however is a matter of normal design procedure and does not involve an inventive step for the reason (b) discussed above for document D1.

3 INDEPENDENT CLAIM 12

- 3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 12 does not involve an inventive step in the sense of Article 33(3) PCT. Claim 12, as far as claim 12 is clear, is a representation of the method of claim 1 in terms of apparatus features. Therefore the same arguments apply like for claim 1.

4 DEPENDENT CLAIMS 2-11, 13-22

Dependent claims 2-11, 13-22 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

Re Item VII.

Independent claims 1 and 12 are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1, D2) being placed in the preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D3, D6-D8 and D10 is not mentioned in the description, nor are these documents identified therein.

Re Item VIII.

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As explained below, some of the features in the apparatus claims 12-22 to relate to a method of using the apparatus rather than clearly defining the apparatus in terms of its technical features. The intended limitations are therefore not clear from this claim, contrary to the requirements of Article 6 PCT.

As an example, claim 12 specifies that " a server that **connects**", "a service broker to which a service **registers** and which **receives** a message ..."